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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/753,372	01/02/01	SIMS J	10980039-2

EXAMINER	
PORTKA, G	
ART UNIT	**PAPER NUMBER**
2187	3

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DATE MAILED: 08/14/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/753,372	Sims, III et al.
Examiner	**Art Unit**
Gary J. Portka	2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Jan 2, 2001* .

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-24 and 32-37* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-24 and 32-37* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
18) ☐ Interview Summary (PTO-413) Paper No(s). _____
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other:

DETAILED ACTION

1. Claims 25-31 were canceled by Applicant's preliminary amendment. Claims 1-24 and 32-37 are presented for examination.

Priority

2. It is acknowledged that this is a continuation of Application 09/089,112, filed in the U.S. on June 2, 1998, now U.S. Patent 6,212,647 B1.

Specification

3. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

4. The disclosure is objected to because of the following informalities:

a. Claims 9 and 10 are objected to due to the language "disposed on the media prior to (subsequent to)". Since, lacking any other information, it is not apparent what location would be considered "prior" or "subsequent" to another on a disk, it is suggested that this be clarified to include the relationship, such as with regard to chronological address order.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-24 and 32-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 8, 15, 20, and 35 recite "optimization of defect management". Claim 32 recites "optimize data access". It is not clear exactly what are the metes and bounds that the Applicant intends to cover with the language "optimize" or "optimization" (support in specification?). A response in the parent application to this rejection cited a definition of optimize as to "make as perfect, effective, or functional as possible". However, this nonetheless is a relative term not defined by the claim, and the specification does not provide a standard for ascertaining the requisite degree. Claims 1 and 15 recite "irrespective of physical attributes of the media". This language is indefinite, since the term "physical attributes" may be broadly interpreted as any physical attributes, for example attributes which have no relationship to the parameters (such as the diameter or weight of the disk). Applicant clearly intends the scope to be something more narrow than this broad interpretation, but the exact scope intended is not clear (support in specification?). See MPEP 2173.04. Claims 2-14, 16-24, and 36-37 are further rejected due to their incorporation of the indefinite language of independent claims 1, 15, and 35.

Claims 32-34 each ultimately depend from claim 25, which was canceled, therefore rendering these claims indefinite. Should they have also been canceled?.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

8. Claims 1-6, 9-10, 12-19, 21-22, 24, and 35-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Atsatt et al., U.S. Patent 5,983,309.

9. As to claims 1 and 15, Atsatt discloses a *system/method of defect management, comprising*:

a. *User area parameter, and means for providing it, defining a user data area on the media* (#LBA_R 63, see Figures 5 and 6, also Figures 16A and 16B, where #LBA_R is shown as 26 for the zone 0 shown in Figure 16A; see column 5 lines 31-41, column 9 lines 15-17, column 17 line 66 to column 18 line 3);

b. *Replacement area parameter, and means for providing it, defining a replacement area on the media* (#Slip_R 62, see Figures 5 and 6, also Figures 16A and 16B, where #Slip_R is shown as 6 for the zone 0 shown in Figure 16A; see column 5 lines 31-41, column 9 lines 12-14, column 18 lines 3-4, column 20 lines 11-14); *where the replacement area may be null* (since the field may be set to zero), and *where the two parameters are selectable to allow optimizing defect management irrespective of physical attributes of the media* (see column 4 lines 8-9, column 9 lines 26-29, column 13 lines 23-30, and Figures 12B and 13A, in particular, at boxes 163 and 168; in non-recording zone based sparing the two parameters above, #LBA_R and #Slip_R, as well as Cslip, allow the setting up of sparing regions across zones as desired, and thus are selectable to allow optimizing, to the extent that term is understood, irrespective of the media physical attributes).

10. As to claims 2 and 16, Atsatt discloses the defect list including information identifying each independently accessible section of user data replacement area (DDT 40, Figure 3, see column 7 lines 40-42, 48-57, and column 7 line 63 to column 8 line 8).

11. As to claims 3 and 17, Atsatt discloses categorizing the sections of the replacement area as to use in replacing, as the status field 31 (see column 7 lines 63-67).

12. As to claims 4 and 18, in Atsatt the categorizing mentioned with regard to claim 3 above includes information regarding defective user data section not recorded within the replacement area (status field 31).

13. As to claim 5, in Atsatt chaining is prevented as recited since consecutive defects require only one entry (see column 8 lines 2-6).

14. As to claims 6 and 19, in Atsatt discloses the recited conditions for selection of user data/replacement parameters causing plural equal size zones (considering the "sparing regions" at column 5 lines 31-41, and column 13 lines 23-30 as the recited zones).

15. As to claims 9-10 and 21-22, in Atsatt, as is apparent from Figure 16A, and because reassigned LBAs may be designated as desired (from column 8 lines 40-43), either area may be disposed on the media first.

16. As to claims 12 and 24, the logical address hierarchy with omission of defective physical addresses, and affect on subsequent media sections, is disclosed in Atsatt (see column 7 lines 48-57 and column 8 lines 1 and 14-22).

17. As to claim 13, in Atsatt the defect list identifies defective sections and omits them from the logical address hierarchy (see column 8 line 1).

18. As to claim 14, in Atsatt the omission of defective physical addresses is in single user data sections (LBAs, see column 7 lines 48-57 and column 8 lines 1 and 14-22).

19. As to claim 35, Atsatt discloses a *method for defect management for block addressable media, comprising*:

a. *Providing a spare interval parameter, establishing number of blocks of user data area on the media* (#LBA_R 63, see Figures 5 and 6, also Figures 16A and 16B, where #LBA_R is shown as 26 for the zone 0 shown in Figure 16A; see column 5 lines 31-41, column 9 lines 15-17, column 17 line 66 to column 18 line 3);

b. *Providing a spare length parameter, establishing number of blocks of user sparing area on the media* (#Slip_R 62, see Figures 5 and 6, also Figures 16A and 16B, where #Slip_R is shown as 6 for the zone 0 shown in Figure 16A; see column 5 lines 31-41, column 9 lines 12-14, column 18 lines 3-4, column 20 lines 11-14); *where the number of blocks of sparing area may be zero* (since the field may be set to zero), and *where the two parameters are selectable to allow optimizing defect management irrespective of zones of the media* (see column 4 lines 8-9, column 9 lines 26-29, column 13 lines 23-30, and Figures 12B and 13A, in particular, at boxes 163 and 168; in non-recording zone based sparing the two parameters above, #LBA_R and #Slip_R, as well as Cslip, allow the setting up of sparing regions across zones as desired, and thus are selectable to allow optimizing, to the extent that term is understood, irrespective of the media zones), *maintaining a*

defect list including information identifying each block of user sparing area (DDT 40, Figure 3, see column 7 lines 40-42, 48-57, and column 7 line 63 to column 8 line 8), *wherein the list includes information regarding status of each block* (status field 31, see column 7 lines 63-67).

20. As to claim 36, Atsatt discloses information of defective block that has not been recorded to replacement area, as the status field 31 (see column 7 lines 63-67).

21. As to claim 37, the logical address hierarchy with omission of initially determined defective physical addresses, and affect on subsequent media sections, is disclosed in Atsatt (see column 7 lines 48-57 and column 8 lines 14-22).

Allowable Subject Matter

22. Claims 7-8, 11, 20, and 23 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims, also amended to overcome any relevant objections made above.

23. The following is an examiner's statement of reasons for indicating allowable subject matter (note that this statement makes certain assumptions concerning to how the 35 USC 112, 2nd paragraph rejection above may be responded):

Regarding claim 7, the prior art of record does not teach or suggest a defect management method that provides user area and replacement area parameters, selectable without regard to pre-existing physical zones on the media, that may be selected to define a plurality of equal size user area - replacement area zones on the media, and wherein the physical address of a particular user area is

determined from the logical address by the equation given in the claim. The method of Atsatt appears to use a similar equation at 168 of Figure 13A, but several terms are not consistent with the claimed equation: 1) Atsatt uses only the replacement area parameter instead of adding this to the user area parameter in the first product; 2) Atsatt adds a cumulative slip instead of adding the modulo of logical address divided by user area parameter. Although Atsatt allows selection of the data and spare parameters without regard to zones as stated hereinabove, it appears that zone data is still required in address translation calculations. The present invention appears to greatly simplify the translation calculations required in this respect, and Examiner can find no rationale that would lead one of ordinary skill in the art to modify Atsatt in this manner.

Regarding claims 8 and 20 the prior art of record does not teach or suggest a defect management method that provides user area and replacement area parameters, selectable without regard to pre-existing physical zones on the media, and wherein the user area and replacement parameters are selectable from all options given in the claims. While certainly some of these options were known in the art at the time (and at least one option is disclosed by Atsatt), the versatility of this invention is exemplified by the ability to set the parameters to provide for any of these options, regardless of pre-existing zoning considerations. Note that Examiner interprets the language "selectable . . . from the group" as that each option is provided for.

Regarding claims 11 and 23 the prior art of record does not teach or suggest a defect management method that provides user area and replacement area parameters, selectable without regard to pre-existing physical zones on the media, wherein the replacement area is disposed on the

media prior to the corresponding data area, and their parameters are selected so that their sum is greater than the size of the media to accommodate selection of a desired replacement area parameter. While there may exist prior art in which a particular size of replacement area exists prior to a particular size of corresponding data area on a media, where these sizes are the same as the sizes that may result from the outcome of the recited selection of parameters, no art was found, and no known rationale exists, for providing parameters which may be selectable as recited, and which are selected so that their sum is greater than the media size, to accommodate the replacement area desired.

Conclusion

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Patent No.

5,848,438 Defect mapping using slipping and linear replacement.

5,835,930 Mapping surplus of defects on a track to a plurality of logical tracks.

5,812,755 Defect management using a track format for logical zones and a second data structure for other defects.

5,568,606 Adaptive skewing using skip profiles for unused defective and spare sectors.

5,271,018 Defect management with partitions each with local spare, and overflow spares at the end of the zone.

25. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) days from the mail date of this letter. Failure to respond within the period for response will result in Abandonment of the application (see 35 USC 133, MPEP 710.02, 710.02(b)).

26. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:
(703) 308-9051, (for formal communications intended for entry)

or:
(703) 305-9731 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

27. Any inquiry concerning this communication from the Examiner should be directed to Gary J. Portka at telephone number (703) 305-4033. The Examiner can normally be reached on weekdays from 9:00 A.M. to 5:30 P.M.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Do Yoo, can be reached on (703) 308-4908. The fax phone number for this Group is (703) 305-9731.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 305-3900.

Gary J. Portka 
Patent Examiner
August 10, 2001